

ABSTRACT

A microscale firetrain for a safe and arm device having a safe position and an armed position, the firetrain including an input explosive column having a longitudinal axis; a transfer charge having a longitudinal axis and first and second ends and movable from a safe position to an armed position; a receptor charge having a longitudinal axis that is non-collinear with and substantially parallel to the longitudinal axis of the input explosive column; wherein, in the safe position, the transfer charge is remote from both the input explosive column and the receptor charge; and wherein, in the armed position, the input explosive column is adjacent the first end of the transfer charge to thereby initiate the transfer charge, the longitudinal axis of the input explosive column is substantially perpendicular to the longitudinal axis of the transfer charge, the second end of the transfer charge is adjacent the receptor charge to thereby initiate the receptor charge and the longitudinal axis of the receptor charge is substantially perpendicular to the longitudinal axis of the transfer charge.